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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/595,146

08/15/2006

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EXAMINER

TURK, NEIL N

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

07/07/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/595,146	Applicant(s) YAMASHITA ET AL.	
	Examiner NEIL TURK	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/17/09.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/23/06, 3/03/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remarks

This Office Action fully acknowledges Applicant's remarks filed on June 17th, 2009. Claims 1-4 are pending. Claims 2 and 4 have been withdrawn from consideration as being drawn to a non-elected invention.

Election/Restrictions

Applicant's election without traverse of Group I, claims 1 and 3, in the reply filed on June 17th, 2009 is acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Masuda et al. (US 2003/0168392), hereafter Masuda.

Masuda discloses a multi-dimensional liquid chromatography separation system (abstract). Masuda discloses a first analysis system 26 having a first column 6 (one dimensional analysis column) and a trapping system 28 which includes a rotary valve

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14 (preparative portion) with a plurality of ports R*, as well as switching valves 12, 13 (collectively as a path switching mechanism as claimed) for selectively and sequentially processing effluent to a plurality of trap columns 15-20, and then selectively processing the effluent/analytes from the various trap columns to a second column 24 (two-dimensional analysis column) and then onto a detector 25 (paragraphs [0030-0053], Example 1, figs. 1-5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki (JP 07-005160; by way of translation) in view of Sumiyoshi (JP 04-221759; by way of translation) and in view of Jorgenson et al. (5,389,221).

Yamazaki discloses a liquid chromatography apparatus for the separation of a multi-component system. Yamazaki discloses a first column 7 (one-dimensional analysis column) for separating a sample into a plurality of components and vacuum columns 15-1 :: 15-n (preparative portion) for fractionating the components separated from the first column. Yamazaki further discloses that the components of each fraction are then captured by respective enriching columns 21-1 :: 21-n (plurality of trap columns), before being sent to the second column 23 (two-dimensional analysis

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column; 6mm in diameter) for separating the components into a plurality of components, which are then detected by detector 24 (Abstract; paragraphs [0006-0017]+, drawing 1).

With regard to claim 1, Yamazaki does not specifically disclose a path switching mechanism as claimed. With regard to claim 3, Yamazaki also does not specifically disclose that an inside diameter of the two-dimensional analysis column is between 0.03 and 0.30 mm.

Sumiyoshi discloses a high performance liquid chromatograph to analyze a plurality of samples in a short time. Sumiyoshi discloses at least three columns 1, 2, 3 for pretreatment that are connected to a column 9 for analysis through a switching valve 4 in a manner in which the columns are capable of switching. Sumiyoshi discloses that this constitution allows orderly analysis of a sample, in which pretreatment of the sample is completed during a time in which the sample is separated at the analysis column (abstract, drawing 1).

Jorgensen discloses a two-dimensional separation system, and discloses that microcolumns (columns with an inner diameter $\leq 250 \mu\text{m}$) have been shown to be considerably more efficient than conventional size columns (lines 45-54, col. 1+).

It would have been obvious to modify Yamazaki to include a path switching mechanism such as taught by Sumiyoshi in order to allow selective analysis of components from a particular column.

It would have been an obvious to modify Yamazaki to include the two-dimensional analysis column with an inner diameter between 0.03 and 0.30 mm such as

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taught by Jorgensen as such would provide a more efficient separation column in the form of a microcolumn.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda in view of Jorgensen.

Masuda has been discussed above.

Masuda does not specifically disclose that an inside diameter of the two-dimensional analysis column is between 0.03 and 0.30 mm.

Jorgensen has been discussed above.

It would have been obvious to modify Masuda to include the two-dimensional analysis column with an inner diameter between 0.03 and 0.30 mm such as taught by Jorgensen as such would provide a more efficient separation column in the form of a microcolumn.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NEIL TURK whose telephone number is (571)272-8914. The examiner can normally be reached on M-F, 9-630.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NT

/Jill Warden/
Supervisory Patent Examiner, Art Unit 1797